

REMARKS

This communication is in response to the Action mailed on November 14, 2006. In that Action, claims 1 through 22 were rejected.

The applicants have amended claims 1 and 12 to clarify the meaning thereof.

The Examiner rejects claims 1 through 22 under 35 U. S. C. 103 as being obvious in face of U.S. Patent 6,724,144 to Takeji et al. taken in view of U.S. Patent 6,300,729 to Keijser et al. The Examiner appears to contend that the Takeji reference shows the metal halide lamps of the present invention except for not having the ratio of the separation length to the effective operation diameter being greater than 2. This deficiency of the Takeji reference the Examiner finds to be supplied by the Keijser reference disclosure in the Summary appearing in column 2 thereof. With these contentions, the applicants must respectfully disagree.

The Examiner, in this last Action, states in the arguments response therein that an open ends discharge chamber contains a selected geometrical volume, but this can only be so by the Examiner assuming, arbitrarily in the absence of his conceding any structures being present there, some surfaces limiting the extent of each of the openings at those ends. As well known, from analytical geometry or from dictionaries, a volume is the size of a three dimensional spatial region which region is defined by the enclosed surface thereabout. In the absence of any part of such a volume defining surface, a calculation of the volume of the spatial region will show it to be infinite because the missing portion of the otherwise enclosing surface must be at infinity. More practically, structure 11 of the Takeji reference will, contrary to the Examiner's statement in his arguments response, not keep any gas or air contained therein if its ends are open, and this is precisely why terminal plates 13 are provided therein for closing the ends of that structure.

These terminal plates, so positioned within the end walls of corresponding small diameter portions 11C in that structure, result in overlapping walls in arc tube 6 of the Takeji reference contrary to present claims 1 and 12. These overlapping wall portions at the joints of terminal plates 13 and the

corresponding one of small diameter portion 11C in this arc tube are at locations accessible to the arc discharge gases occurring in that tube during times the lamp is being operated by providing arc discharges therein. Thus, the added structural material there with respect to the other portions of the arc tube exposed to those gases unavoidably causes "cold spots" that lead to reducing vapor pressures of ionizable materials doses in that tube and so to corresponding decreases in the emitted light radiation.

In contrast, the present invention provides an arc discharge chamber with no overlapping walls at locations which are accessible to the ionized gases occurring therein during lamp operation. Such a structural geometry is clearly shown in Figures 3 and 5 illustrating alternative arc discharge chambers embodying the present invention. This geometry and has been the basis for independent claims 1 and 12 each reciting an arc discharge chamber free of overlapping wall structures between the walls and tubes therein as it bounds the discharge region, including where the electrodes pass through the chamber into the discharge region. This arrangement, just as clearly, is not shown in the Takeji reference.

Nevertheless, the applicants have amended claims 1 and 12 above in view of the arguments response of the Examiner in which he seems concerned about sealing. Those claims have been amended to set out therein some further details of the electrodes sealing in the arc discharge chamber at the two ends of that chamber. These claims now recite the structural arrangement that assure sealing of the electrodes in the chamber in a manner so as to discontinuous, overlapping wall structures. Therefore, the applicants respectfully submit that claims 1 and 12 are clearly allowable over the Takeji and Keijser references taken either alone or together, and so then are the claims dependent thereon.

In view of the foregoing, the applicants respectfully request that the Examiner reconsider his rejection of claims 1 through 22 as amended, and further request that these claims as amended now be allowed.

The Commissioner is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account 11-0982.

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-9-

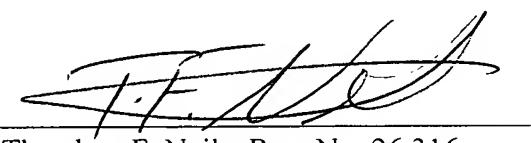
Any inquiries regarding this application should be directed to Theodore F. Neils at (612) 339-1863.

Respectfully submitted,

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